

REMARKS

Applicants express appreciation to the Examiner for consideration of the subject patent application. This amendment is in response to the Office Action mailed February 24, 2009 in which the following actions were taken:

(1) claims 1, 3, 10-12, 16, 17, 19, and 26 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,723,179 to Wong et al. (hereinafter “Wong”) in view of U.S. Patent No. 6,585,366 to Nagata et al. (hereinafter “Nagata”);

(2) claims 4, 14, 20, 22, and 27 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Wong in view of Nagata and further in view of Japan Patent Application 2001-049155 of Iijima (hereinafter “Iijima”);

(3) claims 5, 6, 15, 21, 28, 31-36, and 41 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Wong in view of Nagata and further in view of Japan Patent Application 2002-207275 of Wang et al. (hereinafter “O’Connor” to preserve continuity with previous communications);

(4) claim 13 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Wong in view of Nagata and further in view of U.S. Patent No. 5,624,484 to Takahashi et al. (hereinafter “Takahashi”);

(5) claim 29 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Wong in view of Nagata and further in view of U.S. Patent Publication No. 2003/0198885 of Tamagawa et al. (hereinafter “Tamagawa”);

(6) claim 30 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Wong in view of Nagata and further in view of Japan Patent No. 02026747 (hereinafter “Deguchi”);

(7) claim 37 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Wong in view of Nagata and O’Connor and further in view of Takahashi; and

(8) claims 38-40 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Wong in view of Nagata and O’Connor and further in view of Iijima.

Reconsideration of the application is respectfully requested in view of the following responsive remarks.

Claim Amendments

By the current amendment, claims 1, 17, and 31 are amended to clarify the aqueous nature of ink-jet inks recited, and to include a recitation of latex particulates. These amendments find support in the specification at page 1, lines 22-24, 29-31; page 2, lines 10-14; page 12, lines 31-32, and original claims 4, 20, and 38.

Declaration under 37 C.F.R. 1.132

Together with the amendments and remarks, Applicants provide a declaration in accordance with 37 C.F.R. 1.132 (hereinafter "Exhibit 1") in support of the patentability of the claimed invention over the prior art and in support of the assertions provided below.

Claim Rejections - 35 U.S.C. § 103

(1) Rejection of claims 1, 3, 10-12, 16, 17, 19, and 26 over Wong in view of Nagata

The Examiner has rejected claims 1, 3, 10-12, 16, 17, 19, and 26 under 35 U.S.C. § 103(a) as being unpatentable over Wong in view of Nagata. Applicants submit that the Examiner has not established that the present independent claims 1 and 17 or the claims depending therefrom are *prima facie* obvious over Wong and Nagata.

Independent claim 1 is directed to a system for printing durable ink-jet ink images, including offset media, an aqueous ink-jet ink having a pigment colorant and dispersed latex particulates, a fixer composition, and a calendaring device. The ink-jet ink is configured to be ink-jetted onto the offset media. The fixer composition includes a crashing agent that is reactive with a component of the ink-jet ink and is configured to be overprinted or underprinted on the offset media with respect to the ink-jet ink. The calendaring device is configured for applying pressure and heat to offset media once the ink-jet ink is ink-jetted thereon. The pressure is mechanical pressure applied at from 500 psi to 3000 psi, and the heat to be applied is from 20-90°C. The result is a printed image with a durability and waterfastness that is unexpected for aqueous ink-jet inks printed on offset media. See Exhibit 1.

Independent claim 17 is directed to a method of printing images on offset media, including ink-jetting an aqueous ink-jet ink having a pigment colorant and dispersed latex particulates onto offset media to form a printed image, underprinting or overprinting a fixer composition with

respect to the ink-jet ink, applying pressure to the printed image such that a physical property of the printed images is altered by the pressure, and applying heat to the printed image. The heat applied is from 20-90°C and the pressure is mechanical pressure applied at from 500 to 3000 psi. As before, the fixer composition includes a crashing agent that is reactive with a component of the ink-jet ink. The result is a printed image with a durability and waterfastness that is unexpected for aqueous ink-jet inks printed on offset media. See Exhibit 1.

Wong discloses a method and a precipitant composition for printing waterfast images, which includes treating a print substrate with the precipitant composition and then jetting an ionic dye-based ink onto the substrate. See Abstract. As acknowledged by the Examiner, Wong does not teach a calendaring device or use of calendaring as required by claim 1. Also, while teaching that coated paper and plastics for overhead projection can be utilized, Wong does not teach offset printing media. Applicant also points out that, contrary to the Examiner's assertion, Wong does not teach a fixer composition comprising a cationic polymer as required by claim 11. Also, the method of Wong is directed to printing with dye-based inks, and does not teach using ink including pigment as required by claims 1 and 17. In fact, Wong refers to pigments as generally unsatisfactory adhesion to the print substrate. Col. 2, lines 52-54.

Nagata discloses an image forming method in which an ink-receiving layer is calendered before or after printing, and a latex coat layer is laminated onto the ink-receiving layer after printing, then passed through heated rollers. Col. 2, lines 11-19; col. 4, lines 57-67. Calendaring serves to smooth the interface between the ink-receiving layer and the coat layer, preventing air bubbles that may reduce optical density of printed ink. Col. 5, lines 6-18.

Applicants submit that the combination of Wong and Nagata do not provide a basis of a *prima facie* case of obviousness against claims 1 or 17. Wong and Nagata fail to teach or suggest every element of the claims, and are not properly combinable to establish a *prima facie* case.

Particularly, Wong and Nagata do not teach an ink-jet ink including a pigment colorant as required by claims 1 and 17. As discussed above, Wong teaches dye-based inks. Nagata's only teaching regarding pigments is that they may be used if applicable to the ink-jet recording method.

Col. 4, lines 50-52. Given the teaching of Wong, it is clear that the combination of Wong with Nagata fails to teach or fairly suggest this element of claims 1 and 17. In addition, as mentioned above, Wong and Nagata also fail to teach or suggest the cationic polymer of dependent claim 11.

Furthermore, Applicants submit that the Examiner has not articulated a sufficient rationale for combining Wong and Nagata. In particular, Wong and Nagata do not provide a reason or suggestion for one skilled in the art to combine their respective teachings. As discussed above, Wong teaches using a precipitant composition on dye-based inks to produce waterfast images, and teaches against the suitability of pigments. In addition to being directed to printing with a different type of colorant than the present claims, Wong does not suggest the use of calendering in creating waterfast images. Nagata teaches calendering as a means to improve lamination of printed images. Nagata does not teach waterfastness as a result of the disclosed method, and certainly does not teach the use of calendering to produce such a result. As such, Applicants submit Wong and Nagata do not provide any reason that would make it obvious for one skilled in the art to combine them. Therefore, such a combination would only arise from a hindsight construction based on Applicants' disclosure, which is an improper basis for a *prima facie* case of obviousness.

Finally, Applicants submit that even if Wong and Nagata could be considered to present a *prima facie* case of obviousness against Applicants' claims, such a case would be rebutted by the unexpected results provided by the claimed invention. MPEP 716.02(a). As discussed above, and discussed further in Exhibit 1, the properties of offset media make it difficult to print with aqueous ink-jet ink on these media. Aqueous ink-jet inks do not adhere well to offset media, resulting in poor quality images. However, the claimed invention unexpectedly provides durable, waterfast images with aqueous ink-jet ink printed on offset media. Therefore, Applicants submit that claims 1 and 17 and their dependents are nonobvious over Wong and Nagata.

In view of the above, Applicants respectfully submit that claims 1, 3, 10-12, 16, 17, 19, and 26 are allowable over Wong and Nagata and request the withdrawal of this rejection.

(2) Rejection of claims 4, 14, 20, 22, and 27 over Wong in view of Nagata and further in view of Iijima

The Examiner has rejected claims 4, 14, 20, 22, and 27 under 35 U.S.C. § 103(a) as being unpatentable over Wong in view of Nagata and further in view of Iijima.

Each of the rejected claims depends from independent claim 1 or independent claim 17. The deficiencies of Wong and Nagata with regard to those claims (and any claims depending therefrom) is discussed above and incorporated here.

Iijima (that is, an abstract thereof) is cited for teaching an ink-jet ink including a pigment colorant comprising latex. The Examiner has suggested that it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention taught by Wong in view of Nagata to replace the ink-jet ink thereof with an ink-jet ink with a pigment as taught by Iijima for the purpose of obtaining an image with high waterproof and abrasion resistance thereby providing good ink preservation. However, Applicants submit that this is not a sufficient rationale for combining the references. Particularly, Iijima does not remedy the absence of a rationale to combine Wong and Nagata in the first place. Furthermore, the scant teaching of the Iijima abstract does not provide a rationale for modifying Wong, which teaches the inferiority of pigments and further already teaches that waterfast images are obtainable with the materials taught in Wong.

In view of the above, Applicants submit that Iijima with Wong and Nagata do not present a *prima facie* case of obviousness of either claim 1 or 17, and therefore not against claims 4, 14, 20, 22, and 27, which include every limitation of claims 1 and 17. Therefore, Applicants respectfully submit that claims 4, 14, 20, 22, and 27 are patentable and request the withdrawal of this rejection.

(3) Rejection of claims 5, 6, 15, 21, 28, 31-36, and 41 over Wong in view of Nagata and further in view of O'Connor

The Examiner has rejected claims 5, 6, 15, 21, 28, 31-36, and 41 under 35 U.S.C. § 103(a) as being unpatentable over Wong in view of Nagata and further in view of O'Connor.

Claims 5, 6, 15, 21, 28, and 30 each depend from independent claim 1 or independent claim 17. The deficiencies of Wong and Nagata with regard to those claims (and any claims depending therefrom) is discussed above and incorporated here.

Independent claim 31 is directed to a system for printing durable ink-jet ink images. The system includes offset media, an aqueous ink-jet ink having a pigment colorant and dispersed latex particulates, an overcoat composition, and a calendaring device. The ink-jet ink is configured to

be ink-jetted onto the offset media. The overcoat composition includes a liquid vehicle having latex particulates dispersed therein and is also configured to be overcoated with respect to the ink-jet ink. The latex particulates are present in the overcoat composition at from 0.1 wt% to 15 wt%. The calendaring device is configured for applying pressure and heat to offset media once the ink-jet ink is ink-jetted thereon. The pressure is mechanical pressure applied at from 500 psi to 3000 psi, and the heat to be applied is from 20-90°C.

As with the inventions set forth in claims 1 and 17, Wong and Nagata do not teach or suggest the elements of the system of claim 31 or its dependents 32-36 and 41. Particularly, Wong and Nagata fail to teach or suggest offset media and an aqueous ink-jet ink having a pigment colorant and dispersed latex particulates. Wong and Nagata also fail to teach or suggest the cationic polymers required by claim 35. Furthermore, the inappropriateness of combining Wong and Nagata to provide a teaching of calendaring also affects this rejection. As discussed above, Wong does not suggest the use of calendaring in creating waterfast images and Nagata teaches calendaring as a means to improve lamination of printed images not to confer waterfastness on printed ink.

O'Connor does not remedy the above deficiencies of Wong and Nagata with respect to the independent claims. As such, the combination of O'Connor with Wong and Nagata fails to present a *prima facie* case of obviousness against claims 5, 6, 15, 21, 28, 31-36, and 41. Furthermore, as discussed above and in Exhibit 1, it is unexpected that printing with aqueous ink-jet ink on offset media as required by claim 31 would produce durable ink-jet images. Therefore, Applicants respectfully submit that claims 5, 6, 15, 21, 28, 31-36, and 41 are patentable and request the withdrawal of this rejection.

(4) Rejection of claim 13 over Wong in view of Nagata and further in view of Takahashi

The Examiner has rejected claim 13 under 35 U.S.C. § 103(a) as being unpatentable over Wong in view of Nagata and further in view of Takahashi. Claim 13 depends from independent claim 1. The deficiencies of Wong and Nagata with regard to claim 1 (and any claims depending therefrom) is discussed above and are also applicable here. Takahashi is cited to provide a teaching of particular crashing agents. However, Applicants submit that Takahashi does not remedy the defects of the combination of Wong and Nagata with respect to claim 1, from which

claim 13 depends. Particularly it does not remedy the lack of rationale for combining Wong and Nagata, so that the combination cited in this rejection also lacks such rationale. Therefore, Applicants submit that claim 13 is patentable and request the withdrawal of this rejection.

(5) Rejection of claim 29 over Wong in view of Nagata and further in view of Tamagawa

The Examiner has rejected claim 29 under 35 U.S.C. § 103(a) as being unpatentable over Wong in view of Nagata and further in view of Tamagawa. Claim 29 depends from independent claim 17. The deficiencies of Wong and Nagata with regard to claim 17 (and any claims depending therefrom) is discussed above and are also applicable here. Tamagawa is cited to provide a teaching of primarily affecting smoothness of the printed ink. However, Applicants submit that Takahashi does not remedy the defects of the combination of Wong and Nagata with respect to claim 1, from which claim 13 depends. Particularly it does not remedy the lack of rationale for combining Wong and Nagata. Furthermore, Tamagawa is directed to electrophotographic printing, which involves different inks and printing methods than inkjet printing. As such, the combination cited in this rejection also lacks a rationale that would support a *prima facie* case of obviousness. Therefore, Applicants submit that claim 13 is patentable and request the withdrawal of this rejection.

(6) Rejection of claim 30 over Wong in view of Nagata and further in view of Deguchi

The Examiner has rejected claim 30 under 35 U.S.C. § 103(a) as being unpatentable over Wong in view of Nagata and further in view of Deguchi. Claim 30 depends from independent claim 17. The deficiencies of Wong and Nagata with regard to claim 17 (and any claims depending therefrom) is discussed above and are also applicable here. Deguchi is cited to provide a teaching of primarily affecting flow of printed ink. However, Applicants submit that Deguchi does not remedy the defects of the combination of Wong and Nagata with respect to claim 17, from which claim 30 depends. Particularly it does not remedy the lack of rationale for combining Wong and Nagata, so that the combination cited in this rejection also lacks such rationale. Therefore, Applicants submit that claim 30 is patentable and request the withdrawal of this rejection.

(7) Rejection of claim 37 over Wong in view of Nagata and O'Connor and further in view of Takahashi

The Examiner has rejected claim 37 under 35 U.S.C. § 103(a) as being unpatentable over Wong in view of Nagata and O'Connor and further in view of Takahashi. Claim 37 depends from independent claim 31. The deficiencies of Wong and Nagata with regard to claim 31 (and any claims depending therefrom) is discussed above and are also applicable here. As also discussed above, Applicants submit that neither O'Connor nor Takahashi remedies the defects of the combination of Wong and Nagata with respect to claim 31, from which claim 37 depends. Particularly neither addresses the lack of rationale for combining Wong and Nagata, so that the combination cited in this rejection also lacks such rationale. Therefore, Applicants submit that claim 37 is patentable over this combination of references and request the withdrawal of this rejection.

(8) Rejection of claims 38-40 over Wong in view of Nagata and O'Connor and further in view of Iijima

The Examiner has rejected claim 38-40 under 35 U.S.C. § 103(a) as being unpatentable over Wong in view of Nagata and O'Connor and further in view of Iijima. These claims each depend from independent claim 31. The deficiencies of Wong and Nagata with regard to claim 31 is discussed above and are also applicable here. As also discussed above, Applicants submit that neither O'Connor nor Iijima remedies the defects of the combination of Wong and Nagata with respect to claim 31, from which claims 38-40 depend. Particularly, neither O'Connor nor Iijima addresses the lack of rationale for combining Wong and Nagata, so that the combination cited in this rejection also lacks such rationale. Therefore, Applicants submit that claims 38-40 are each patentable over this combination of references and request the withdrawal of this rejection.

CONCLUSION

In light of the above, Applicants respectfully submit that the pending claims are in condition for allowance. Therefore, Applicants request that the rejections and objections be withdrawn, and that the claims be allowed and passed to issue. If any impediment to the allowance of these claims remains after consideration of this response, the Examiner is strongly encouraged to call Gary Oakeson at (801) 566-6633 so that such matters may be resolved as expeditiously as possible.

The Commissioner is hereby authorized to charge any additional fee or to credit any overpayment in connection with this communication to Deposit Account No. 08-2025.

DATED this 26th day of May, 2009.

Respectfully submitted,

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